

the operation of the device or (b) restart the operation of the device without indicating the value of a bill whose denomination is not determined by the discriminating unit.

73. A currency denominating device adapted to receive a stack of currency bills, rapidly denominate and count the bills in the stack, and re-stack the bills comprising:
- a bill input receptacle adapted to receive a stack of currency bills;
  - a single output receptacle;
  - a bill transport defining a transport path and adapted to transport the bills, one at a time, from the input receptacle to the output receptacle along the transport path;
  - a sensor positioned adjacent to the transport path;
  - a control panel having an input device adapted to receive input from an operator of the device; and
  - a processor electrically coupled to the sensor and the control panel and programmed to:
    - (a) denominate bills;
    - (b) keep track of the value of bills processed;
    - (c) suspend the operation of the device when the denominating processor is unable to identify the denomination of a bill;
    - (d) enable the operator, upon suspension of the operation of the device, to designate via the control panel the denomination of a bill whose denomination is not determined by the processor; and
    - (e) enable the operator, upon suspension of the operation of the device, to restart the operation of the device without designating the denomination of a bill whose denomination is not determined by the processor.

74. The device of claim 73 wherein the processor is programmed to restart the operation of the device after the operator designates the denomination of a bill whose denomination is not determined by the processor.

75. The device of claim 73 wherein the processor is programmed to suspend the operation of the device with the bill whose denomination the processor is unable to identify being located in the output receptacle.

76. Currency denominating apparatus comprising:  
a bill input receptacle;

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a single output receptacle;

a bill transport adapted to transfer bills between the input receptacle and the output receptacle;

one or more sensors positioned proximate the bill transport and operable to generate signals indicative of denominational characteristics of bills transported by the transport;

a plurality of denomination keys corresponding to a plurality of denominations;

a continuation key; and

a processor programmed to:

- (a) denominate bills transported by the bill transport in response to the signals generated by the one or more sensors,
- (b) keep track of the denominations of the bills in one or more counters;
- (c) suspend operation of the transport when the processor is unable to denominate a bill based on the signals;
- (d) reflect, upon selection of one of the denomination keys after the operation of the transport has been suspended, the denomination corresponding to the selected denomination key in the one or more counters; and
- (e) restart the operation of the transport without adversely affecting the one or more counters upon selection of the continuation key after the operation of the transport has been suspended.

77. The device of claim 76 wherein the processor is programmed to restart the operation of the device upon selection of one of the denomination keys after the operation of the transport has been suspended.

78. Currency denominating apparatus comprising:

a bill input receptacle adapted to receive a stack of currency bills;

a single output receptacle;

a bill transport adapted to transfer bills, one at a time, from the input receptacle to the output receptacle;

one or more sensors positioned proximate the bill transport and operable to generate signals indicative of denominational characteristics of bills transported by the transport;

a plurality of denomination keys corresponding to a plurality of denominations;

a continuation key;

a denomination counter corresponding to each of the plurality of denominations; and

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a processor programmed to:

- (a) denominate bills transported by the bill transport in response to the signals generated by the one or more sensors,
- (b) keep track of the number of bills of each of the plurality of denominations by incrementing the corresponding denomination counter each time the processor denominates a bill;
- (c) suspend operation of the transport when the processor is unable to denominate a bill based on the signals with the bill which the processor was unable to denominate being located in the output receptacle where it can be conveniently examined and if desired removed from the device;
- (d) upon a single depression of one of the denomination keys after the operation of the transport has been suspended, increment the denomination counter corresponding to the denomination of the depressed denomination key and restart the operation of the transport; and
- (e) restart the operation of the transport without adversely affecting the denomination counters upon depression of the continuation key after the operation of the transport has been suspended.

79. A currency denominating device comprising:

a bill input receptacle;

a single one output receptacle;

a bill transport defining a transport path between the input receptacle and the output receptacle;

at least one sensor positioned adjacent to the transport path;

a bill denominating processor electrically coupled to the sensor;

one or more counters keeping track of the value of bills processed;

a controller programmed to suspend the operation of the device when the denominating processor is unable to identify the denomination of a bill;

a plurality of denomination keys associated with different bill denominations, the denomination keys enabling the operator to designate the value of a bill whose denomination is not determined by the processor upon suspension of the operation of the device; and

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a continuation key enabling the operator, upon suspension of the operation of the device, to restart the operation of the device without designating the value of a bill whose denomination is not determined by the processor.

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80. The device of claim 79 wherein the denomination keys enable the operator to both designate the value of a bill whose denomination is not determined by the processor upon suspension of the operation of the device and restart the operation of the device with the touch of a single denomination key.

81. A currency counting and discrimination device for receiving a stack of currency bills, rapidly counting and discriminating the bills in the stack, and then re-stacking the bills comprising:

an input receptacle adapted to receive a stack of currency bills to be discriminated;  
a discriminating unit adapted to discriminate the denomination of the currency bills;  
a single output receptacles adapted to receive the currency bills after being discriminated by the discriminating unit;  
a transport mechanism adapted to transport the currency bills, one at a time, from the input receptacle past a sensor of the discriminating unit and to the output receptacle;  
one or more counters adapted to keep track of the value of bills discriminated;  
a controller programmed to suspend the operation of the transport mechanism when the discriminating unit is unable to identify the denomination of a bill: and  
an operator interface capable of receiving input from an operator of the device, the interface enabling, upon suspension of the operation of the device, the operator to either (a) indicate the value of a bill whose denomination is not determined by the discriminating unit and restart the operation of the device or (b) restart the operation of the device without indicating the value of a bill whose denomination is not determined by the discriminating unit.

82. The device of claim 81 wherein the controller is programmed to suspend the transport mechanism with the bill whose denomination the discriminating unit is unable to identify being located in the output receptacle.

83. A method of discriminating and counting currency bills comprising:  
receiving a stack of currency bills in an input receptacle of a currency evaluation device;

transferring the bills, under the control of the evaluation device, one at a time from the input receptacle, past a sensor of a discriminating unit, to a single output receptacle;

determining, under control of the evaluation device, the denomination of each passing bill;

incrementing, under the control of the evaluation device, a count corresponding to one of a plurality of denominations based on the determined denomination of each passing bill when the device determines the denomination of a bill;

stopping, under the control of the evaluation device, the transferring when the device is unable to determine the denomination of a bill so that the bill whose denomination is not determined is located at a predetermined position within the output receptacle, the bill whose denomination is not determined being termed a no call bill;

an operator of the evaluation device examining the no call bill; and the operator either

(a) depressing a key corresponding to the denomination of the no call bill when examining results in a determination that the bill is acceptable, whereby, under the control of the discrimination device, the corresponding count associated with the denomination of the no call bill is incremented and the transferring is continued; or

(b) removing the no call bill without replacement when the examining does not result in a determination that the no call bill is acceptable and depressing a continuation key whereby, under the control of the bill evaluation device, the transferring is continued.

84. A method of discriminating and counting currency bills comprising:

receiving a stack of currency bills in an input receptacle of a currency denominating device;

transferring, under the control of the device, the bills in the input receptacle one at a time past a denominating sensor to a single output receptacle;

denominating, under the control of the device, the bills based on a predetermined criterion;

incrementing, under the control of the device, a count corresponding to one of a plurality of denominations of bills the device is capable of denominating when the device identifies a bill as satisfying the predetermined criterion;

stopping, under the control of the device, the transferring when a bill fails to satisfy the predetermined criterion or when the device is unable to determine whether a bill satisfies the predetermined criterion, the transferring stopping so that the bill that triggered the stopping is located at an identifiable position within the output receptacle;

an operator of the device examining the triggering bill; and the operator either

(a) depressing a key corresponding to the denomination of the triggering bill when the examining results in a determination that the bill is acceptable, whereby, under the

control of the device, the corresponding count associated with the denomination of the triggering bill is incremented and the transferring is continued; or

- (b) removing the triggering bill without replacement when the examining does not result in a determination that the triggering bill is acceptable and depressing a continuation key whereby, under the control of the device, the transferring is continued.

85. A method of discriminating and counting currency bills using a currency discriminating device having denomination keys and a continuation key and one or more counters keeping track of bills processed by the device comprising:  
receiving a stack of currency bills in an input receptacle of the currency discriminating device;  
feeding the bills in the input receptacle one at a time past a sensor to a single output receptacle;  
generating a signal from the sensor;  
determining automatically the denomination of bills fed past the sensor using the signal from the sensor;  
incrementing an appropriate counter when the denomination of a bill is determined automatically;  
suspending the feeding when the denomination of a bill is not automatically determined; and  
either  
manually designating the denomination of a bill whose denomination is not automatically determined by depressing an appropriate denomination key or  
manually depressing the continuation key on the device to cause the feeding to be resumed without designating the denomination of a bill whose denomination is not automatically determined.

86. The method of claim 85 further comprising the discriminating device incrementing an appropriate counter in response to the depression of the denomination key.

87. The method of claim 86 further comprising the discriminating device resuming operation in response to the depression of the denomination key.

88. The method of claim 85 wherein the discriminating device has an additional key in addition to the denomination keys and further comprising, after manually designating the

denomination, the discriminating device incrementing an appropriate counter in response to the depression of the additional key.

89. The method of claim 88 further comprising the discriminating device resuming operation in response to the depression of the additional key.

90. A method of discriminating and counting currency bills using a single output receptacle currency discriminating device having keys including denomination keys and a continuation key and one or more counters keeping track of bills processed by the device comprising:

receiving a stack of currency bills in an input receptacle of the currency discriminating device;

feeding the bills in the input receptacle one at a time past a sensor of a discriminating unit to a single output receptacle, the discriminating unit determining the denomination of bills fed past the sensor;

incrementing an appropriate counter when the discriminating unit determines the denomination of a bill;

suspending operation of the device when the discriminating unit fails to determine the denomination of a bill; and either

(i) manually selecting the denomination of a bill whose denomination is not determined by the discriminating unit by depressing an appropriate denomination key or

(ii) manually selecting a continuation key.

91. The method of claim 90 further comprising manually depressing a key after the selecting the denomination to cause the selected denomination to be indicated to the device.

92. A method of discriminating and counting currency bills using a single output receptacle currency discriminating device having keys including denomination keys and one or more counters keeping track of bills processed by the device comprising:

receiving a stack of currency bills in an input receptacle of the currency discriminating device;

feeding the bills in the input receptacle one at a time past a sensor of a discriminating unit to a single output receptacle, the discriminating unit determining the denomination of passing bills;

incrementing an appropriate counter when the discriminating unit determines the denomination of a bill;

suspending operation of the device when the discriminating unit fails to determine the denomination of a bill; and either

- (i) manually selecting an appropriate denomination key corresponding to the denomination of a bill whose denomination is not determined by the discriminating unit.
- (ii) manually selecting a continuation key.

93. The method of claim 92 wherein the selecting an appropriate denomination key comprising scrolling to the denomination to be selected.

94. The method of claim 93 further comprising the operator manually selecting a key after the selecting an appropriate denomination key to cause the selected denomination to be indicated to the device.

95. The method of claim 92 further comprising the operator manually selecting a key after the selecting an appropriate denomination key to cause the selected denomination to be indicated to the device.

96. A method of discriminating and counting currency bills using a currency discriminating device having a control panel and one or more counters keeping track of bills processed by the device comprising:

receiving a stack of currency bills in an input receptacle of the currency discriminating device;

the discriminating device feeding the bills in the input receptacle one at a time past a sensor of a discriminating unit to a single output receptacle, the discriminating unit determining the denomination of passing bills;

the discriminating device incrementing an appropriate counter when the discriminating unit determines the denomination of a bill;

the discriminating device suspending operation when the discriminating unit fails to determine the denomination of a bill; and

an operator of the device either

- (a) using the control panel to manually communicate the denomination of a bill whose denomination is not determined by the discriminating unit to the discriminating unit or



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- (b) using the control panel to manually restart the operation of the device without communicating the denomination of a bill whose denomination is not determined by the discriminating unit to the discriminating unit.

97. The method of claim 96 further comprising the discriminating device resuming operation after the operator communicates the denomination of the bill.

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98. A method of discriminating and counting currency bills using a currency discriminating device having a control panel and one or more counters keeping track of bills processed by the device comprising:
- receiving a stack of currency bills in an input receptacle of the currency discriminating device;
- feeding the bills in the input receptacle one at a time past a sensor of a discriminating unit to a single output receptacle, the discriminating unit determining the denomination of passing bills;
- incrementing an appropriate counter when the discriminating unit determines the denomination of a bill;
- suspending the feeding when the discriminating unit fails to determine the denomination of a bill with the bill whose denomination the discriminating unit failed to determine being located in an output receptacle; and
- after suspending the feeding either:
- (a) manually using the control panel to indicate the denomination of the bill whose denomination is not determined by the discriminating unit or
  - (b) manually removing from the output receptacle the bill whose denomination the discriminating unit failed to determine and then using the control panel to restart the feeding without indicating the denomination of the bill whose denomination is not determined by the discriminating unit.

99. The method of claim 98 further comprising resuming feeding the bills after the denomination of the bill is indicated.